In the Claims:

1. (Currently amended) A process for preparing a 5-cyanovaleric acid or its ester comprising reacting pentenenitrile with carbon monoxide and water and/or an alcohol in the presence of a catalyst system, comprising

(a) a source of Group VIII metal, and

(b) a bidentate phosphine ligand which is 1,2-bis(di-tert.butylphosphinyomethyl) benzene, and ~~wherein the bidentate ligand has the general formula (I):~~

~~R^1R^2-P-R-P-R^3R^4 (I)~~

~~wherein R is a divalent organic bridging group, which bridging group comprises a chain of 3 to 5 atoms directly connecting the 2 phosphorus atoms, which chain consists of carbon atoms and optionally a nitrogen, oxygen or sulphur atom or a silano or dialkylsilicon group, which alkyl groups independently comprise from 1 to 4 carbon atoms, and R^1-R^4 represent the same or different optionally substituted tertiary alkyl groups,~~

(c) an acid having a pKa less than 3, as measured at 18 °C in an aqueous solution.

Cancel claims 2-5.

6. (Original) The process of claim 1 wherein the Group VIII metal is palladium.

Cancel claim 7.

8. (Original) The process of claim 1 wherein the molar ratio between the ligand (b) and the metal (a) is in the range of 1:1 to 5:1.

9. (Original) The process of claim 8 wherein the Group VIII metal is palladium.

10. (Original) The process of claim 1 wherein the reaction is carried out at a temperature in the range of about 80 to about 125 °C.

Cancel claim 11.

12. (Original) The process of claim 6 wherein the reaction is carried out at a temperature in the range of about 80 to about 125 °C.

13. (Original) The process of claim 1 wherein the molar ratio of acid compound (c) and metal (a) is between 1:1 and 5:1.

14. (Currently amended) A process for preparing ε-caprolactam comprising:

(i) reacting pentenenitrile with carbon monoxide and water and/or an alcohol in the presence of a catalyst system, comprising

(a) a source of Group VIII metal,

(b) a bidentate phosphine ligand which is 1,2-bis(di-tert.butylphosphinyomethyl) benzene, ~~wherein the bidentate ligand has the general formula (I):~~

~~R^1R^2-M^1-R-M^2-R^3R^4 (I)~~

~~wherein M^1 and M^2 are independently P, As or Sb, R is a divalent organic bridging group, which bridging group comprises a chain of 3 to 5 atoms directly connecting the 2 phosphorus atoms, which chain consists of carbon atoms and optionally a nitrogen, oxygen or sulphur atom or a silano or dialkylsilicon group, which alkyl groups independently comprise from 1 to 4 carbon atoms, and R^1-R^4 represent the same or different optionally substituted tertiary alkyl groups,~~ and

(c) an acid having a pKa less than 3, as measured at 18 °C in an aqueous solution thereby producing 5-cyanovaleric acid or ester,

thereby producing 5-cyanovaleric acid or ester;

(ii) reducing the 5-cyanovaleric acid or ester to provide 6-aminocaproic acid or ester, and

(iii) cyclising the 6-aminocaproic acid or ester to provide ε-caprolactam.

15. (Original) The process of claim 14 wherein a mixture of branched and linear carbonylation products as obtained in step (i) is used in step (ii) and/or (iii).

Cancel claims 16-19.

20. The process of claim 14 wherein the Group VIII metal is palladium.

Cancel claim 21.

22. The process of claim 14 wherein the molar ratio between the ligand (b) and the metal (a) is in the range of 1:1 to 5:1.

23. The process of claim 14 wherein the reaction is carried out at a temperature in the range of about 80 to about 125 °C.